AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 (currently amended). An isolated polynucleotide comprising:

a) the nucleotide sequence of ~~FIG. 3~~ FIGS. 3A-3C (SEQ ID NO:1); or

b) a fragment comprising at least 10 contiguous nucleotides of the nucleotide sequence of ~~FIG 3~~ FIGS. 3A-3C (SEQ ID NO:1).

2 (currently amended). An isolated polynucleotide comprising:

a) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence of ~~FIG. 3~~ FIGS. 3A-3C (SEQ ID NO:2);

b) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence numbers 318-335 as depicted in ~~FIG. 3~~ FIGS. 3A-3C (SEQ ID NO:5);

c) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence numbers 368-385 as depicted in ~~FIG. 3~~ FIGS. 3A-3C (SEQ ID NO:6); or

d) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence numbers 671-688 as depicted in of ~~FIG. 3~~ FIGS. 3A-3C (SEQ ID NO:7).

3 (previously presented). An isolated polynucleotide which hybridizes under stringent conditions to the complement of the polynucleotide of Claims 1 or 2.

4 (previously presented). A vector comprising the polynucleotide of Claims 1 or 2.

5 (previously presented). An expression vector comprising the polynucleotide of Claims 1 or 2 in operative association with a nucleotide regulatory sequence that controls expression of the nucleotide sequence in a host cell.

6 (previously presented). A host cell genetically engineered to contain the polynucleotide of any of Claims 1 to 5.

7 (currently amended). An isolated polypeptide ~~gene product~~ comprising:

a) the amino acid sequence encoded by the polynucleotide of Claim 1 or 2;

b) the amino acid sequence shown in ~~FIG. 3~~ FIGS. 3A-3C (SEQ ID NO:2); or

c) the amino acid sequence having at least 80% identity, over a region of identical size without any insertions or deletions, to at least 40 contiguous amino acids of the sequence as depicted in ~~FIG. 3~~ FIGS. 3A-3C (SEQ ID NO:2).

8 (currently amended). An isolated or recombinant polypeptide comprising at least 10 contiguous amino acids of a protein [~~defined by~~] consisting of an amino acid sequence as

depicted in ~~Figure 3~~ Figures 3A-3C (SEQ ID NO:2), which polypeptide is capable of being bound by an antibody to said protein defined by an amino acid sequence as depicted in ~~Figure 3~~ Figures 3A-3B (SEQ ID NO:2).

9 (currently amended). An isolated or recombinant polypeptide comprising a PKA-RII subunit binding domain ~~defined by~~ consisting of amino acid sequence numbers 318-335 as depicted in Figure 3 Figures 3A-3C (SEQ ID NO:5).

10 (currently amended). An isolated or recombinant polypeptide comprising a PKA-RII subunit binding domain ~~defined by~~ consisting of amino acid sequence numbers 368-385 as depicted in Figure 3 Figures 3A-3C (SEQ ID NO:6).

11 (currently amended). An isolated or recombinant polypeptide comprising a PKA-RII subunit binding domain ~~defined by~~ consisting of amino acid sequence numbers 671-688 as depicted in ~~Figure 3~~ Figures 3A-3C (SEQ ID NO:7).

12 (previously presented). An antibody that immunospecifically binds the gene product of any of Claims 7-11.

13 (previously presented). The antibody of claim 12 capable of inhibiting sperm motility.

14 (previously presented). The antibody of claim 12 which is monoclonal.

15 (previously presented). A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an effective amount of the antibody of claim 12.

16 (previously presented). A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an effective amount of a polypeptide of any of claims 9-11.

17 (previously presented). A contraceptive comprising the composition of claim 15 or 16, effective to inhibit or decrease sperm motility.

18 (previously presented). A method for inhibiting fertilization in a subject comprising administering the pharmaceutical composition of claim 15 or 16 to the subject, wherein sperm motility is inhibited or decreased.

19 (previously presented). A method of modulating the activity of FSP95 or at least one of its signalling pathway or cell that expresses FSP95, comprising contacting the cell with:

a) the antibody of claim 12;

b) the gene product of claim 7; or

c) the polypeptide of any of claims 8-11.

20 (previously presented). A method of modulating the activity of FSP95 or a cell expressing FSP95, comprising contacting FSP95 or a cell expressing FSP95, with a kinase or phosphatase.

21 (previously presented). A method for diagnosing or screening for the presence of or a predisposition for developing a fertility-related disorder associated with the presence of antibodies immunoreactive to FSP95 in a subject, comprising collecting a sample of serum from the subject and detecting the presence of antibodies to FSP95 in said sample, wherein the presence of antibody indicates the presence or predisposition of a fertility-related disorder.

22 (previously presented). A method of identifying a modulator of FSP95, comprising contacting FSP95 or a cell expressing FSP95 with a candidate modulator and measuring or detecting the activity of FSP95.

23 (previously presented). The method of claim 22, wherein said activity is measured by a sperm motility assay.

24 (previously presented). A method of treating a subject for a fertility-related disorder comprising administering an effective amount of the polynucleotide of claim 1 or claim 2, to the subject.

25 (previously presented). A method of treating a subject for a fertility-related disorder comprising administering an effective amount of the gene product of claim 7, or the polypeptide of any of claims 8-11, to the subject.

26 (previously presented). A method of treating a subject for a fertility-related disorder comprising administering an effective amount of the antibody of claim 13 or 14.

27 (previously presented). A transgenic non-human animal containing a transgene encoding the gene product of claim 7, or encoding the polypeptide of any of claims 8-11.

28 (previously presented). A transgenic non-human animal containing a transgene comprising the polynucleotide of claim 1 or 2.

29 (previously presented). A method for producing gene product of FSP95, comprising growing a recombinant cell containing the polynucleotide of claim 1 or 2, such that the encoded gene product is expressed by the cell and recovering the expressed gene product.

30 (previously presented). A kit comprising in one or more containers a substance selected from the group consisting of, an antibody to FSP95, nucleic acid probes capable of

hybridizing to RNA of FSP95, or pairs of nucleic acid primers capable of priming amplification of at least one portion of the FSP95 gene.